

**Claims**

1. An optical network comprising:
- a network management station,
  - at least one source network element associated with the network management station,
- and
- at least one destination network element,
- wherein the source network element comprises a source proxy for sending an OSC signal in the form of IP datagrams to the destination network element under the control of the management station, the source proxy being arranged in a manner such that, in use, it sends duplicate IP datagrams along two different optical paths to the destination network element, and
- wherein the destination network element comprises a destination proxy arranged to pass one of the duplicate IP datagrams into the destination network element for processing and to filter out for disposal the other one.
2. An optical network as claimed in claim 1, wherein the source proxy is arranged in a manner such that, in use, the duplication of the IP datagrams is effected at an IP layer or at an Ethernet layer.
3. A network as claimed in claim 1, wherein the management function comprises the distribution of one or more of the group of alarm reports, audit logs, alarm logs, status reports and control messages.
4. A network as claimed in claim 1, wherein the optical network is arranged in a manner such that, in use, the management function is being effected via e-mail messages transmitted using the standard IP protocols.
5. A network as claimed in claim 1, wherein the optical network is arranged in a manner such that, in use, the management function is being effected via an HTTP server incorporated in the network element and accessible via a conventional web browser.
6. A network as claimed in claim 1, wherein the network element may comprise a network node or an in-line amplifier.

7. A network as claimed in claim 1, wherein the optical network is a ring network, and the different paths of the duplicated OSC signal comprise transmission paths along opposite directions of the ring network.

8. A network as claimed in claim 1, wherein the optical network is a mesh network, and the source proxy is arranged in a manner such that, in use, it sends at least two identical IP datagrams along at least two different optical paths to the destination network element, and the destination network element comprises a destination proxy arranged to pass one of the IP datagrams into the network element for processing and to filter out for disposal the others.

9. A network as claimed in claim 1, wherein the optical network comprises more than one destination network element, and the destination network elements are arranged in a manner such that the OSC is terminated and re-transmitted at each intermediate destination network element.

10. A network as claimed in claim 1, wherein the source proxy is arranged to be capable of also functioning as a destination proxy, and/or the destination proxy is arranged to be capable of functioning as a source proxy.

11. A method of managing an optical network comprising the steps of:

- sending duplicate OSC signals in the form of IP datagrams along two different optical paths to a destination network element, and
- at the destination network element, passing one of the duplicate IP datagrams into the destination network element for processing and filtering out for disposal the other one.

12. A network element for use in an optical network, the optical network element comprising:

- a source proxy for sending an OSC signal in the form of IP datagrams to a destination network element on the network under the control of a management station, the source proxy being arranged in a manner such that, in use, it sends duplicate IP datagrams along two different optical paths to the destination network element.

13. A network element as claimed in claim 12, wherein the network element further comprises a destination proxy arranged, in use, to receive duplicate OSC signals from another network element in the form of IP datagrams, the destination proxy being arranged to pass one

of the duplicate IP datagrams into the network element for processing and to filter out for disposal the other one.

14. A network element as claimed in claim 12, wherein the network element comprises a network node or an in-line amplifier.

15. A network element as claimed in claim 12, wherein the management station is incorporated in the network element.

16. A network element for use in an optical network, the optical network element comprising:

- a destination proxy arranged receive duplicate OSC signals in the form of IP datagrams, the destination proxy further being arranged to pass one of the duplicate IP datagrams into the network element for processing and to filter out for disposal the other one.

17. A network element as claimed in claim 16, wherein the network element comprises a network node or an in-line amplifier.

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